

DRAFT ENVIRONMENTAL ASSESSMENT MEPA, NEPA, MCA 23-1-110 CHECKLIST

9th STREET ISLAND BRIDGE PROJECT

January 26, 2010

Prepared for:

**Montana Fish, Wildlife & Parks
and
Park County, Montana**

Prepared by:



PO Box 582
Livingston, MT 59047

- Page Intentionally Left Blank -

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS.....	iii
Part I. Proposed Action Description	1
Part II. Environmental Review Checklist.....	8
Part II. Environmental Review (continued).....	26
Part III. EA Conclusion Section	29

ATTACHMENTS

Site Location Map

Site Plan

Joint Application

Pollution Control and Prevention (PCP) Plan

April 1, 2009 SHPO Letter

- Page Intentionally Left Blank -

ACRONYMS AND ABBREVIATIONS

County Park County
DNRC Department of Natural Resources and Conservation
EA Environmental Assessment
ft feet
FWP Montana Fish, Wildlife & Parks
MEPA Montana Environmental Protection Act
MT DEQ Montana Department of Environmental Quality
NOI Notice of Intent
OASIS OASIS Environmental, Inc.
SHPO State Historic Preservation Office
SWPPP Stormwater Pollution Prevention Plan
USCOE United States Army Corps of Engineers
USGS United States Geologic Service

- Page Intentionally Left Blank -

PART I. PROPOSED ACTION DESCRIPTION

1. Type of Proposed State Action:

Bridge replacement on the Yellowstone River.

2. Agency Authority for the Proposed Action:

The Montana Stream Protection Act requires the Montana Department of Fish, Wildlife & Parks to administer a stream protection program for projects that may affect the natural existing shape of any stream, its banks, or tributaries. MCA 87-5-501.

3. Name of Project:

9th Street Island Bridge Replacement Project

4. Name, Address, and Phone Numbers of Project Sponsor:

Park County, Montana
Marty Malone, Park County Commissioner
414 East Callender Street
Livingston, MT 59047
(406) 222-4106

5. If Applicable:

Estimate Construction / Commencement Date:

February 15, 2010

Estimate Completion Date:

June 15, 2010

Current Status of Project Design (% Complete):

100% complete

6. Location Affected by Proposed Action (county, range, and township):

SE SE NW Sec 24 R9E T2S

7. Project Size: Estimate the number of acres that would be directly affected that are currently:

ACRES		ACRES	
(a) Developed		(e) Productive	
Residential	0.0	Irrigated Cropland	0.0
Industrial	0.0	Dry Cropland	0.0
(b) Open Space/Woodlands/Rec	0.0	Forestry	0.0
(c) Wetlands/Riparian Areas	0.0	Rangeland	0.0
(d) Floodplain	0.06	Other	0.02

Approximately 2,500 ft² of upland turf grass and pasture grass located on each side of the bridge access points (and within the floodplain) will likely sustain temporary surface damage due to temporary fills for the temporary detour bridge and equipment traffic. The grass will be reseeded with similar grass species following construction where needed. The 2,500 ft² disturbance area also includes ground surface disturbance associated with a temporary settling pond that will be excavation on the 9th Street Island. Turbid water that is captured during the construction of the center pier for the permanent bridge will be discharged into the settling pond. When the decanted water has slowly filtered through the temporary settling pond, the pond will be back-filled with native soil and reclaimed.

There will be no impacts to wetland areas due to the project. Approximately 1,000 ft² of river bed will be temporarily impacted as a result of the project due to the installation of a temporary detour bridge and work platform. Of that amount, approximately 20 ft² will be permanent impacts to the streambed associated with the new bridge pier. However, the project will remove approximately 200 ft² of existing impacts through removal of the five existing bridge piers of the old 9th Street bridge. The temporary impacts will be naturally reclaimed as the stream bottom is reworked during spring runoff flows.

8. Map / Site Plan:

See "Attachments" for a site map and site plan figure.

9. Listing of any other local, state or federal agency that has overlapping or additional jurisdiction:

(a) Permits:

Agency Name	Permit	Date Filed/#
FWP	SPA 124 – Joint Application	1-15-10
FWP	MEPA – EA Checklist	1-15-10
Park Co. Floodplain Coordinator	Floodplain Permit – Joint App.	1-15-10
USCOE	Section 10 – Joint App.	1-15-10
MT DEQ	318 Authorization – Joint App.	1-15-10
DNRC	Historic Landuse Easement	1-15-10
SWPPP + NOI	DEQ	TBA

(b) Funding:

Agency Name	Funding Amount
House Bill 645: American Reinvestment & Recovery Act Funds (US Dept of Interior)	\$172,000
Transportation, Housing and Urban Development, and Related Agencies Appropriations Act, 2010 (HR3288)	\$625,500

(c) Other Overlapping or Additional Jurisdictional Responsibilities:

Agency Name	Type of Responsibility
SHPO	Letter of Clearance
	1-15-10

10. Narrative summary of the proposed action or project including the benefits and purpose of the proposed action:

Project Purpose: The purpose of the project is to reduce flood risk and damage to property, human health, or life by 1) removing the remaining portions of the damaged Ninth Street Bridge over the Yellowstone River in Park County; 2) removing the temporary Bailey bridge that has been in use since July 2008; and 3) constructing a new permanent bridge that will improve flood conveyance and allow Park County residents safe access across the Yellowstone River. During project construction, a temporary detour bridge will be installed upstream of the permanent structure to allow continued access to the island by residents. This bridge will be removed once the permanent bridge is operable. Timing is of the essence to achieve the desired result prior to spring runoff.

Current Site Condition: The project area spans an urbanized portion of the Yellowstone River. A temporary Bailey bridge currently spans the river which connects the City of Livingston to the 9th Street Island (Park County jurisdiction). The majority of the original bridge (damaged by flooding in June 2008) was removed in April/May 2009; however both abutments and two piers and associated segments of the bridge deck remain on the south bank (river right). The right and left banks adjacent to the existing bridge abutments are steep (1:1 or greater) and covered by rock riprap. A willow (*Salix* sp.) complex is located on the downstream left bank but is not expected to be disturbed by project activities. Several mature cottonwood trees are growing on the upstream and downstream side of the bridge. Construction activities will work around the trees, and they will be preserved to the greatest extent possible. It is anticipated that the cottonwood tree and shrub near the north abutment will be removed during construction. There are no other structures located immediately within the proposed project envelope with the exception of one overhead power/communication line that is supported by power poles on each river bank. Northwest Energy intends to remove/relocate the power line prior to the start of construction. Qwest has made accommodations to transfer a temporary communications line to the temporary detour bridge. This communications line will then be incorporated into bridge construction.

Project Description: The purpose of the project is to reduce flood risk and damage to property, human health, or life by 1) removing the remaining portions of the damaged Ninth Street Bridge over the Yellowstone River in Park County; 2) removing the

temporary Bailey bridge that has been in use since July 2008; and 3) constructing a new permanent bridge that will improve flood conveyance and allow Park County residents safe access across the Yellowstone River.

The project area is illustrated in Figure 1 and is nearly identical to the project area required for the temporary bridge installation work that took place in July 2008. Construction will take place during seasonal low water beginning in February 15, 2010, and will be completed by June 15, 2010, or before spring runoff. Work in the channel is anticipated to be completed by May 15, 2010.

The project will involve the construction of a temporary detour bridge immediately upstream of the existing bridge to allow continued access to the island by residents. A temporary elevated work platform that will be an extension of the detour bridge will also be constructed which will enable heavy equipment to perform the majority of the project tasks above the water and out of the active channel. Once the remaining portions of the old bridge have been removed and the temporary Bailey bridge has been removed and hauled off-site, construction of the new permanent bridge will begin. The dimensions of the new bridge will be 200 feet long and 20 feet wide. The dimensions of the old bridge were approximately 180 ft long and 19 feet wide. Construction will involve replacement of the existing bridge abutments on the left and right channel banks, and the installation of a single pier and hammerhead bent cap in the middle of the channel to provide support for the new bridge superstructure. Because the new bridge will be 20 feet longer (left bank to right bank), the channel banks where the abutments are located will be re-graded to more closely match the upstream and downstream banks that flank the abutments. Existing rip-rap will be removed and re-used. Once the permanent bridge has been constructed and is operable, the temporary work platform and the temporary detour bridge will be removed and hauled off site.

Stream flow will not be affected by the proposed project. No ground cover will be permanently removed as a result of this project. All access routes will be reclaimed to their original condition following construction.

The following measures will be taken to minimize temporary impacts to water quality during construction:

- All machinery operating within the ordinary high water mark (OHWM) will be power washed prior to entering the river channel.
- All equipment will be inspected for fluid leaks (oil, gas, diesel, anti-freeze, hydraulic fluid, and other petroleum leaks) prior to and throughout the construction period to prevent accidental discharge into surface waters.
- Ready mix concrete trucks and all equipment entering or operating off work platforms over the channel will be washed at least 50 feet away from the OHWM of the Yellowstone River and all other drainage channels and urban drainage inlets. Washing will occur in a manner that prevents wash water from flowing into aquatic areas.
- Spill containment kits will be available on site, and the contractor will follow the prepared project Pollution Control and Prevention Plan (attached to the permit).
- Idle equipment will be removed from the site or staged at the designated parking/staging area away from the channel.
- The single bridge pier will be drilled from the temporary work platform. The pier will utilize permanent steel casing to minimize disturbance to the channel bottom. The casing will be 5-feet in diameter. Drilling will proceed approximately 10 feet into the

bedrock formation. Drill cuttings will be removed and hauled off site to the greatest extent possible minimizing turbidity increases. Upon completion of drilling, the casing is socketed into the bedrock formation creating a seal. The casing will then be filled with concrete and capped with a hammerhead pier cap. Introduction of concrete into the river is not anticipated. As the concrete fills the casing, water will be displaced out of the top, canted off into a self-contained settling basin. When full, this self-contained settling basin will be transported and drained into a small settling pond on the project site. Approximately 4,500 gallons of water is anticipated for discharge into the temporary settling pond proposed to be constructed/located on the 9th Street Island. Water will not be discharged directly into the Yellowstone River. When the decanted water has slowly filtered through the temporary settling pond, the pond will be back-filled with native soil and reclaimed.

- It is anticipated that short-term increases in turbidity will result from the work efforts in the active channel to modify the abutment grading, removal of the existing bridge piers, installation of the new bridge pier, and installation and removal of the sheet piling used for the temporary detour bridge and work platform. In an effort to minimize impacts to the water quality, this work will be expedited to the greatest extent practical.
- Additional measures that will minimize impacts are described in the PCP Plan developed for this project.

Project Dimensions: A temporary detour bridge will be located approximately 50 feet upstream of the existing bridge. Temporary impacts to the existing banks include 50 lineal feet of disturbance per side (100 feet total). Work associated with removal and replacement of the existing and proposed abutments includes approximately 60 feet of disturbance per bank (120 feet total). All of the bank impacts associated with the project will be occurring on banks that are already heavily rip-rapped and largely devoid of vegetation. The banks will remain rip-rapped and predominantly unvegetated following construction. Upon completion of the project, the temporary detour bridge will be removed, and the bank will be restored to pre-construction conditions. Any area disturbed through removal and replacement of the abutments will also be restored to pre-construction conditions.

The project will extend from existing adjacent roadways on the left and right bank of the Yellowstone River across the 9th Street Channel of the Yellowstone. The overall estimated length from right bank to left bank is approximately 300 feet (bank full channel is 220 feet wide with 40 feet offset to existing roadways).

Vegetation: Construction activities will take place along banks that are armored with large rip-rap and river cobble and are largely devoid of vegetation; therefore no impacts to vegetation within the banks and channel bottom are expected. Approximately 2,500 ft² of upland turf grass and pasture grass located on each side of the bridge access points will likely sustain temporary surface damage due to temporary fills for the temporary bridge, settling pond, and equipment traffic. The grass will be reseeded with similar grass species following construction where needed.

Natural Resource Benefits: The natural resource benefits include: increased flood conveyance and flow capacity, removal of river obstructions, improved natural sediment transport capacity, and recreation/boater and public safety.

11. List of agencies consulted during the preparation of the EA:

The following agencies were consulted during the preparation of the EA: Montana Fish, Wildlife and Parks, U.S. Army Corps of Engineers, Park County, and Montana Department of Environmental Quality.

12. Additional Information – Project Health and Safety Contingency Planning:

Due to the nature of the project and the timing of the project, the following river monitoring plan and contingency plan has been developed:

Upon construction of the temporary bridge deck, the hydraulics will be evaluated to determine the discharge associated with a water surface elevation equal to the final low chord elevation of the temporary detour bridge. The low chord elevation of the temporary detour bridge will be established by the Contractor. As guidance, the predicted water surface elevations based on average mean daily flows for April, and the peak mean daily flow between April 1 and May 15, are provided in the attached hydraulic modeling summary report.

A corresponding discharge at both Carters Bridge and Corwin Springs will also be determined. The USGS gage at Corwin Springs will be monitored daily to evaluate the daily water surface elevations and discharge. When flows approaching the associated discharge are observed, the contractor will be notified immediately. A one-day lag between Corwin Springs and Carters Bridge exists thus providing the contractor with approximately 24-hours to remove the bridge deck. Within those 24 hours, island residents will be notified and the island will be evacuated per Park County evacuation procedures.

During construction activities, the USGS gages located at both Corwin Springs and Carters Bridge will be monitored daily to evaluate the daily water surface elevations and discharge. The Yellowstone River channel upstream of the 9th Street Island Bridge will also be monitored for the potential of ice-induced flooding and/or release of ice flows that may impact the temporary detour bridge. In the unlikely event that the natural forces associated with Yellowstone River hydrology create a situation that the proposed construction activities need to be temporarily halted; the following contingency plan will be followed.

- In the event that water surface elevations and discharge begins to rise above acceptable levels, the contractor will begin to make preparations to remove the existing deck on the temporary detour bridge. Construction will resume once the potential flooding threat has receded.
- In the event that potential impacts to the temporary structure associated with ice begin to concern the County, various agencies, and/or the Contractor, the temporary detour bridge deck will be removed. Construction will resume once the potential flooding threat has receded.
- If stream gage observations at Corwin Springs and Carters Bridge indicate that any in-stream structures that remain in the river (i.e. detour bridge substructure) may be overtopped by flows and create an unacceptable backwater effect upstream or create a debris hazard, then the Contractor will employ emergency actions to reduce risks and impacts. Emergency actions may also be employed

if other unexpected conditions create an unacceptable risk to the project, environment, human safety, and/or property. The most appropriate emergency action will be determined by the Contractor leading the construction work, however the following general activities may be considered:

- *Removal or modification of instream structures (may involve removing/modifying only portions of the instream structures).* This may involve the increased use of heavy equipment within the active channel. Temporary impacts associated with this type of activity may include temporary bank erosion, temporary increase in surface water turbidity, alteration of the channel bed, and potential scour. Gravel/cobble fill or other suitable materials may need to be placed in the channel to provide heavy equipment temporary access to the channel. Fill material may be used to temporarily divert flows around in-stream work areas or to provide protection for any instream structures that may need additional support during high flow periods.
- *Emergency modification of the workplan.* The Contractor may be required to modify the approved construction work plan in order to complete the project or stabilize a portion of the project prior to impending high water if it is determined that doing so will reduce overall project risks and impacts. Other workplan modifications may arise with equipment failure and the associated tasks necessary to remove, replace, and/or repair the equipment that may be located on the elevated platforms, adjacent to the river, or within the channel itself. This may involve the increased use of heavy equipment within the active channel. Temporary impacts associated with this type of activity may include temporary bank erosion, temporary increase in surface water turbidity, alteration of the channel bed, installation of additional temporary instream structures, and importing temporary fills to allow access to the channel by heavy equipment.

In any emergency situation, human health and safety will be a priority. The proper authorities will be notified, and the residents on the 9th Street Island will be evacuated per the Park County emergency plan.

The project team and the County will work with involved agencies to update and amend project plans, permits, and specification if the proposed project plan or schedule changes.

Any residual impacts will be reclaimed to pre-construction conditions before the project is considered complete.

PART II. ENVIRONMENTAL REVIEW CHECKLIST

1. Evaluation of the impacts of the Proposed Action including secondary and cumulative impacts on the Physical and Human Environment.

The following notes apply to the asterisk (*) symbols inserted in the Tables 1 – 13 below:

* Include a narrative explanation under Part III describing the scope and level of impact. If the impact is unknown, explain why the unknown impact has not or cannot be evaluated.

** Include a narrative description addressing the items identified in 12.8.604-1a (ARM)

***Determine whether the described impact may result and respond on the checklist. Describe any minor or potentially significant impacts.

**** Include a discussion about the issue in the EA narrative and include documentation if it will be useful.

A. PHYSICAL ENVIRONMENT

1. <u>LAND RESOURCES</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. **Soil instability or changes in geologic substructure?			X			1a
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil which would reduce productivity or fertility?		X				
c. **Destruction, covering or modification of any unique geologic or physical features?			X			1c
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?			X			1d
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				

f. Other:			X			1f
-----------	--	--	---	--	--	----

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources:

1a. The project will create temporary, localized disturbances to the soil and geologic subsurface. Two damaged footers/piers from the old bridge will be removed from the active channel. Structural supports for the permanent bridge will be drilled to refusal at bedrock approximately 20 to 30 feet below existing streambed. The original abutments on the north and south river bank will be modified/reinforced, and a new structural footer/pier will be installed in the center of the active channel. Structural support features have been designed and will be installed in a manner that provides structural integrity to the bridge and prevents channel and channel bank instability.

1c. The old bridge removal and permanent bridge construction will modify the existing river channel in the following ways: the remaining portions of the old bridge will be removed from the channel and channel bank; the temporary Bailey bridge will be removed; the new bridge will require only one structural footer/pier in the middle of the bridge span (middle of the river) rather than 5 in stream piers that were used to support the old bridge. The new bridge design will improve flood conveyance. The new bridge will also reduce the number of obstructions in the middle of the river and increase the minimum opening width which will reduce potential upstream flooding from debris jams and improve safety for boaters. Given these changes, local minor adjustment of the Yellowstone River's cobble bed is expected due to the alteration of the section hydraulics. Based on these minor effects, the site has sufficient capacity for development.

1d. Minor changes in localized siltation, deposition, and/or erosion will occur as a result of the project. The original 5 pier bridge created a hydraulic constriction that caused backwater immediately upstream of the bridge during elevated flows. This backwater effect has resulted in some deposition immediately upstream of the bridge. The area where the deposition occurs corresponds to a locally steep bed form (riffle). This local deposition will likely be reduced due to the improved conveyance associated with the proposed new bridge. The riffle upstream of the bridge is longitudinally in phase (spacing) with a similar bed feature near the project and is expected to persist. It is anticipated that channel bottom irregularities resulting from construction will be reworked by high water flows during the spring runoff following construction.

1f. In the event that the Contractor needs to implement the emergency contingency plan described above (page 6); it may be necessary to modify the original workplan. This may involve the increased use of heavy equipment within the active channel. Temporary impacts associated with this type of activity may include temporary bank erosion, temporary increase in surface water turbidity, alteration of the channel bed, installation of additional temporary instream structures, and importing temporary fills to allow access to the channel by heavy equipment.

PHYSICAL ENVIRONMENT

2. <u>AIR</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. **Emission of air pollutants or deterioration of ambient air quality? (also see 13(c))			X			2a
b. Creation of objectionable odors			X			2b
c. Alteration of air movement, moisture or temperature patterns or any change in climate, either locally or regionally?		X				
d. Adverse effects on vegetation, including crops, due to increased emissions of pollutants?		X				
e. ***For P-R/D-J projects, will the project result in any discharge, which will conflict with federal or state air regs? (also see 2a)		X				
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Air:

2a and 2b. Exhaust from construction equipment will create a temporary, localized, and minor impact to air quality and odor.

PHYSICAL ENVIRONMENT

3. <u>WATER</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. *Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?			X			3a
b. Changes in drainage patterns or the rate and amount of surface runoff?		X				
c. Alterations of the course or magnitude of floodwater or other flows?			X			3c
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water related hazards such as flooding?			X			3e
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?		X				
i. Effects on any existing water right or reservation?		X				
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. **** <u>For P-R/D-J</u> , will the project affect a			X			3l

designated floodplain? (also see 3c)						
m. *** <u>For P-R/D-J projects</u> , will the project result in any discharge that will affect federal or state water quality regulations? (also see 3c)			X			3m
n. Other: Project Contingency Plan			X			3n

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water:

3a. Removal of the remaining old bridge structure, removal of the temporary Bailey bridge, installation/removal of the temporary detour bridge and temporary work platform, and construction of the permanent bridge pier and abutment protection will create a temporary increase in turbidity. Disturbance will be minimized by performing the work during the seasonally low flow period and performing the majority of the work above the water on the bridge deck surfaces and the work platform. Additionally, following installation of a steel casing work on the center pier will occur within the casing minimizing turbidity. Discharge from the casing as concrete is poured will be pumped to a settling basin and will not increase turbidity or contaminants entering the river.

3c. Flood conveyance will increase with the removal of the remaining portion of the old bridge and construction of the new bridge that has a greater span and only has one rounded pier in the middle of the river as opposed to six angular piers with the old bridge. The water surface elevation associated with the Q2, Q50, and Q100 flood event is predicted to drop by 0.2 feet, 0.5 feet, and 0.7 feet, respectively, due to the increased water, sediment, and debris conveyance that will result from the new bridge design. A summary of the hydrology and hydraulic analysis that was completed for this project is attached to the Joint Application for further reference. The course of floodwater is not expected to change.

3e. The improved flood conveyance and reduction in number of in-channel obstructions resulting from the project will improve flood conveyance, reduce up and down-stream flooding potential, and reduce boater exposure to in-stream hazards.

3l. Minor impacts to the floodplain will include the modification/reinforcement of the existing abutment on the north and south channel bank. The modifications will improve the existing structure. Because the new bridge span will be wider (north to south) by 20 feet, the slope of the existing rip-rap that reinforces the current abutments will be decreased such that it more closely ties in with the bank slopes immediately upstream and downstream of the abutment.

3m. The project will not affect federal or state water quality regulations with the exception of potential temporary turbidity impacts associated with construction activities. A 318 Authorization application has been submitted to obtain authorization for the temporary turbidity impacts.

3n. In the event that the Contractor needs to implement the emergency contingency plan described above (page 6); it may be necessary to modify the original workplan. This may involve the increased use of heavy equipment within the active channel.

Temporary impacts associated with this type of activity may include temporary bank erosion, temporary increase in surface water turbidity, alteration of the channel bed, installation of additional temporary instream structures, and importing temporary fills to allow access to the channel by heavy equipment.

PHYSICAL ENVIRONMENT

4. <u>VEGETATION</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Changes in the diversity, productivity, or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?		X				4a
b. Alteration of a plant community?		X				
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?		X			X	4e
f. ****For P-R-R/D-J, will the project affect wetlands, or prime and unique farmland?		X				
g. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Vegetation:

4a. The majority of the project area is paved or gravelled. Anticipated impacts to vegetation are limited to disturbing 2500 ft² of turf and pasture grass. The channel banks within the project area are heavily rip-rapped with no vegetation growth. Trampled vegetation will be reseeded as necessary when construction is completed.

4e. Equipment will be clean of weeds or other undesirable species before entering the project area. Should weeds develop as a result of the project; the weeds will be controlled by Park County.

PHYSICAL ENVIRONMENT

5. <u>FISH / WILDLIFE</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Deterioration of critical fish or wildlife habitat?		X				5a
b. Changes in the diversity or abundance of game animals or bird species?		X				
c. Changes in the diversity or abundance of nongame species?		X				
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				5f
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest of other human activity?)		X				
h. ****For P-R/D-J, will the project be performed in any area in which T&E species are present, and will the project affect any T&E species or their habitat? (also see 5f)		X				
i. ***For P-R/D-J, will the project introduce or export any species not presently or historically occurring in the receiving location? (also see 5d)		X				
j. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Fish / Wildlife:

5a. The project will improve flood conveyance and improve river function in the vicinity of the bridge. There are no anticipated negative impacts to fish and wildlife that will result from this project. Temporary disturbance and/or displacement to localized populations may occur during construction. This impact will be minimized by performing construction between February and May 2010 from a work bridge. In the event that the Contractor needs to implement the emergency contingency plan described above (page 6), it may be necessary to modify the original workplan. This may involve the increased use of heavy equipment within the active channel. Temporary impacts associated with this type of activity may include temporary bank erosion, temporary increase in surface water turbidity, alteration of the channel bed, installation of additional temporary instream structures, and importing temporary fills to allow access to the channel by heavy equipment.

5f. The Yellowstone River supports migratory and resident forms of Yellowstone cutthroat trout. Yellowstone cutthroat trout is a species of special concern in Montana. Minimal alterations of the aquatic habitat in this reach of the Yellowstone River is not expected to detrimentally impact the long-term health of this species.

B. HUMAN ENVIRONMENT

6. <u>NOISE / ELECTRICAL EFFECTS</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Increases in existing noise levels?			X			6a
b. Exposure of people to severe or nuisance noise levels?			X			6b
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Noise / Electrical Effects:

6a and 6b. Noise levels associated with heavy equipment operation will increase the existing noise level temporarily during construction.

HUMAN ENVIRONMENT

7. <u>LAND USE</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflict with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				
e. Other:			X			7e

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Use:

The proposed project will greatly improve the ability for residents to safely travel to and from their homes. It will also allow businesses on the island to continue uninterrupted operations.

7e. In the event that the Contractor needs to implement the emergency contingency plan described above (page 6); it may be necessary to modify the original workplan. This may involve the increased use of heavy equipment within the active channel. Temporary impacts associated with this type of activity may include temporary bank erosion, temporary increase in surface water turbidity, alteration of the channel bed, installation of additional temporary instream structures, and importing temporary fills to allow access to the channel by heavy equipment. These actions may temporarily limit the use and access of this particular stretch of river by the public because of potential safety hazards associated with any structures that remain in-stream during high flows. Park County will communicate any potential safety concerns to the public as they develop and communicate when normal access to the river will resume.

HUMAN ENVIRONMENT

8. <u>RISK / HEALTH HAZARDS</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?			X		X	8a
b. Affect an existing emergency response or emergency evacuation plan or create a need for a new plan?			X			8b
c. Creation of any human health hazard or potential hazard?		X				
d. ***For P-R/D-J, will any chemical toxicants be used? (also see 8a)			X		X	8d
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Risk / Health Hazards:

8a. Heavy equipment operating above, within, and adjacent to open water present a risk for hazard substance/chemical toxicant release via equipment leaks and/or refueling spills (i.e. oil, gas, diesel, antifreeze, hydraulic fluid, etc.). The risk will be mitigated by following the Pollution Control and Prevention (PCP) Plan that has been developed specifically for this project.

8b. Currently, normal emergency response services (fire, ambulance) are severely limited in the services they can provide to island residents because of vehicle size limitations of the temporary bridge. The proposed project will allow routine emergency services and evacuation plans to resume. In the event that the Contractor needs to implement the emergency contingency plan described above (page 6), it may be necessary to modify the original workplan and implement an island evacuation per Park County emergency evacuation procedures. Residents would have 24 hours notice to evacuate the island. Emergency contingency actions may temporarily limit the use and access of this particular stretch of river by the public because of potential safety hazards associated with any structures that remain in-stream during high flows. Park County will communicate any potential safety concerns to the public as they develop and communicate when normal access to the river will resume.

8d. See response in 8a.

HUMAN ENVIRONMENT

9. <u>COMMUNITY IMPACT</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?		X				
d. Changes in industrial or commercial activity?		X				
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?		X				
f. Other:			X			9f

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Community Impact:

Currently, only vehicle traffic is allowed access across the river to the island. The proposed project will open access to pedestrian travel which will benefit both island residents and non-residents who enjoy walking, running, and biking on the island.

9f. Resident and public access to and from the island may be temporarily suspended if the Contractor needs to implement the emergency contingency plan described above on page 6 of this document.

HUMAN ENVIRONMENT

10. <u>PUBLIC SERVICES / TAXES / UTILITIES</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:			X			10a
b. Will the proposed action have an effect upon the local or state tax base and revenues?		X				
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?			X			10c
d. Will the proposed action result in increased use of any energy source?		X				
e. ** Define projected revenue sources.						10e
f. **Define projected maintenance costs.						10f
g. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Public Services / Taxes / Utilities:

10a. During construction, access across the river by residents and government services will be limited for safety. The Contractor will prepare an access plan and communicate the plan to affected residents and service providers. When the proposed project is

completed, normal government services and island access will resume. In addition, the County will prepare public announcements and post signs to communicate to the public when construction will take place on the bridge and identify safe exit locations upstream of the construction area. In the event that the Contractor needs to implement the emergency contingency plan described on page 6 of this document, additional emergency services may be required to evacuate island residents, communicate potential river hazards, or otherwise protect the health and safety of the general public.

10c. Temporary disruptions to island electricity are expected to occur during construction due to an overhead power line that spans across the bridge. The County is currently working with Northwestern Energy to develop a service plan during construction that will ensure the safety of the bridge crew but also provides power to island residents when construction crews are not working under the line.

10e. There are no foreseeable revenue sources for the project.

10f. Projected maintenance costs will be similar to typical maintenance costs for other bridges in Park County, approximately \$1,000 per year. It is expected that the new bridge will have significantly lower annual maintenance costs compared to the old bridge which required a standby backhoe to be present during high flows to remove debris jams that would build up on the multiple piers of the old bridge.

HUMAN ENVIRONMENT

11. <u>AESTHETICS / RECREATION</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?		X				11a
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. **Alteration of the quality or quantity of recreational / tourism opportunities and settings? (attach tourism report)		X				11c
d. ***For P-R/D-J, will any designated or proposed wild or scenic rivers, trails or wilderness areas be impacted? (also see 11a, 11c)		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Aesthetics / Recreation:

11a. The proposed project will improve the aesthetics of the current temporary bridge structure.

11c. Once the project is completed, normal recreational opportunities that pass under the bridge will resume. During construction, river access under the bridge may be restricted for public safety. Public announcements and posted signs upstream of the project site will clearly communicate to the public when construction activities are occurring and where to exit the river to avoid traveling through the project area during construction.

HUMAN ENVIRONMENT

12. <u>CULTURAL / HISTORICAL RESOURCES</u> Will the proposed action result in:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. **Destruction or alteration of any site, structure or object of prehistoric, historic or paleontological importance?		X				
b. Physical change that would affect unique cultural values?		X				
c. Effects on existing religious or sacred uses of a site or area?		X				
d. **** <u>For P-R/D-J</u> , will the project affect historic or cultural resources? Attach SHPO letter of clearance (also see 12a)		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Cultural / Historical Resources:

The attached letter of clearance was provided by Montana State Historic Preservation Office (SHPO) when the temporary bridge was installed in July 2008. The project envelope for the proposed project is nearly identical to the temporary bridge project area, and SHPO has provided a second letter of clearance for the construction of the permanent bridge (attached).

C. SIGNIFICANT CRITERIA

13. <u>SUMMARY EVALUATION OF SIGNIFICANCE</u> Will the proposed action, considered in a whole:	IMPACT*				Can Impact Be Mitigated *	Comment Index
	Unknown*	None	Minor*	Potentially Significant*		
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources that create a significant effect when considered together or in total.)		X				
b. Involve potential risks or adverse effects which are uncertain but extremely hazardous if they were to occur?			X		X	13b
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				13e
f. ***For P-R/D-J, is the project expected to have organized opposition or generate substantial public controversy? (also see 13e)		X				
g. ****For P-R/D-J, list any federal or state permits required.						13g

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Summary Evaluation of Significance:

13b. Areas of potential risk include release of fluids from machinery (oils, diesel) and public safety during construction. Risks associated with fluid releases will be minimized by following the project PCP Plan throughout the construction process. Risks to public safety will be minimized through clear public communication prior to, during, and after the construction period. This includes communicating to the public when and how to safely cross the river during construction; and when it is and is not safe to float underneath the bridge area during the construction phase.

The second area of risk associated with this project is the potential for high water conditions to develop before construction is completed. High water conditions would trigger the emergency contingency plan described on page 6 of this document. All necessary emergency actions will be taken to protect the health and safety of the human and physical environment.

13e. This project is not expected to generate significant debate.

13g. Federal and state permits are listed in question 9 of this document and include: SPA 124 (Joint Application), Section 10 (Joint Application), 318 Authorization (Joint Application), Historic Road Easement, and a SWPPP / NOI.

PART II. ENVIRONMENTAL REVIEW (CONTINUED)

2. Description and analysis of reasonable alternatives (including the no-action alternative) to the proposed action, whenever alternatives are reasonably available and prudent to consider, and a discussion of how the alternatives would be implemented:

- a. No Action Alternative:** The no-action alternative would involve maintaining the existing temporary bridge indefinitely. Additionally, the remaining portions of the damaged bridge would remain in place. This alternative was not considered a viable option because the temporary bridge is not intended to be a permanent structure for several reasons: 1) the temporary bridge is not structurally intended to be used as a primary access route for an indefinite period of time; 2) the temporary bridge is posted at 3 tons which provides severe limitations to emergency response vehicles as well as sanitary vehicles used to pump out septic systems on the island; 3) residents that currently own large trailers (recreational and residential) cannot move the trailers off the island because the temporary bridge is not wide enough and cannot safely support large weight loads; 4) the temporary bridge is owned by the State and rented by the County for \$15,000 per month. The County is not interested in purchasing the bridge for safety reasons described above and the State is not interested in renting the bridge indefinitely; 5) the temporary bridge prohibits pedestrian access which severely limits beneficial island use by the general public. In addition, it was not considered reasonable to leave the remaining portions of the old bridge in the water as this presents an unnecessary health and safety risk to the general public.
- b. Other Alternatives:** Other alternatives that were considered included hazard mitigation including an island abandonment option. The County approached the island residents with the option to sell their property to the County and relocate from the island. The temporary bridge would then be removed and the island would become County property that would only be accessible by boat. This option was not viable because not all of the residents were interested in selling their properties. In addition to this alternative, several other alternatives described below were considered to provide continued access to the island; however, the proposed alternative was selected for the following reasons.
- c. Proposed Alternative:** The proposed alternative includes the removal of the remaining portions of the old bridge and removal of the temporary bridge, and construction of a single lane replacement bridge with adjacent pedestrian path along a similar alignment. Various scenarios were considered under the proposed alternative which included construction of a 200-foot wide bridge and a 220-foot wide bridge. For a variety of reasons, the 200-foot wide bridge was ultimately selected as the proposed alternative. In particular, negligible changes in hydraulics in association with significant cost increases and safety concerns in

regards to sight distance and approach grades led to the decision to construct the 200-foot bridge opening. Further details on the preferred alternative are discussed below:

Location – Alternative locations considered included providing a new bridge crossing near the terminus of 11 St S. in addition to several alternative alignments directly upstream and downstream of the existing bridge. The proposed crossing near 11 St S. was not deemed a viable alternative due to conflicts with existing structures and the additional right of way which would be required to be purchased throughout the alignment. As such, several alignments were then considered in the immediate area of the bridge. The rental agreement which Park County has with the Montana Department of Transportation (MDT) in regards to the temporary Bailey bridge requires Park County to return the Bailey bridge to MDT. As such, all alignments considered also included removal of the Bailey bridge. In addition, the remaining portions of the original bridge are structurally inadequate and are currently in jeopardy of failure. Failure of the remaining portions of the bridge may create a substantial flow obstruction and increase the flood potential to the island as well as the City of Livingston. As such, all alternatives also included the removal of the remaining portions of the original bridge. Through this alignment alternatives analysis it was determined that additional rights of way would be required with the other proposed alternatives and that providing a temporary detour bridge to provide continued access to the island during construction was more cost and time effective than procuring the additional right of way.

Roadway Geometry – A single lane bridge was selected as the preferred alternative in accordance the “AASHTO-Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT<400)” which states “Where an existing bridge needs replacement for structural reasons, but there is no evidence of a site-specific safety problem, the replacement bridge can be constructed with the same width as the existing bridge”. The roadway geometry was then established with the following guidelines: 1.) increase the low chord elevation to the greatest extent practical to improve flood conveyance and increase navigational clearance, and 2.) maintain adequate sight distance to view opposing vehicles approaching the bridge. As such, the proposed roadway geometry provides inter-visible pullouts meeting sight distance requirements with a two vehicle queue length with the bridge located on a 4100 ft radius vertical curve.

Deck Drainage – The proposed bridge has been located on a vertical curve to provide improved hydraulic conveyance and increase navigational clearance. As such, the longitudinal grade of the bridge deck will vary from approximately 4 percent at the abutments and 0 percent at the center of the bridge. The cross slope of the bridge deck will be either a 1 percent continuous cross slope, or a 1 percent crown based on the type of superstructure selected by the contractor. Because of the extremely flat grade at the center of the bridge, the bridge deck does not have adequate conveyance capacity to

direct bridge deck precipitation with the use of curbing etc. In addition, concerns have been raised by neighboring residents in regards to bridge drainage providing backwater into the City of Livingston storm drainage system to the north of the bridge and the potential for ice build up on the bridge surface. As a result, precipitation on the bridge will fall directly into the Yellowstone River. It is not anticipated that this will create noticeable impact to the river for the following reasons: 1.) the bridge deck will consist of a concrete driving surface, 2.) the bridge is located on an extremely low volume road with primarily residential traffic, 3.) deicing salts/chemicals are not used for maintenance of the bridge deck, and 4.) the total estimated runoff volume from the bridge deck is approximately 28,000 gallons/year, or less than .000024 percent of the average flow of the Yellowstone river near Livingston.

River Hydraulics – The proposed bridge consists of a 200-foot two span bridge with a single circular pier and hammerhead pier cap located at the center of the bridge. This bridge will improve the conveyance and lower the existing water surface approximately 0.2 ft, 0.5ft, and 0.7 ft at the Q_2 , Q_{50} , and Q_{100} flow events, respectively. In addition to providing increased conveyance, the proposed bridge will also increase the navigational clearance to approximately 9.3 ft above the typical recreational flow (average July flow). For additional hydraulic data, refer to the “9th St. Island Bridge Replacement - Summary of Hydraulic Modeling” prepared by OASIS Environmental.

Construction - A temporary detour bridge will be constructed upstream of the existing bridge to allow continued access to the 9th Street Island throughout construction. Incorporated into this bridge will be a temporary elevated work platform which will also be constructed upstream of the existing bridge at the center of the proposed bridge. This will allow the majority of the construction activities to occur above the water and out of the active stream channel. The temporary detour bridge will also maintain access to and from the island during the construction period. Once remaining portions of the old bridge and the temporary Bailey bridge have been removed, the permanent bridge structure will be installed. The new bridge will be an improvement over the old bridge as it will have a wider bridge span (north to south) and will only have one pier in the middle of the river as opposed to the five piers that the old bridge had. This will minimize the in-channel footprint of the bridge, improve flood conveyance, and improve boater/recreational safety under the bridge. It is anticipated that this detour bridge and work platform will consist of a steel pile and beam substructure with heavy timber decking. This will be designed and constructed by the contractor as shown on the detour plans with the minimum low chord of the detour bridge at an elevation of 4492, approximately 3 ft above the average April water surface. In addition, the Contractor will be required to provide a 20 foot minimum width recreational passage with a minimum low chord elevation of 4495, or 6 ft above the average April water surface elevation.

3. Evaluation and listing of mitigation, stipulation, or other control measures enforceable by the agency or another government agency:

There is no plan at this time to provide mitigation for this project as this project will result in a reduced footprint and an overall improvement in the current condition of the river crossing at this location. Overall, the project is expected to improve channel stability by returning the stream to a more naturally functioning condition that is capable of efficiently transporting sediment and large floating debris. All temporary structures will be removed from the project area following the completion of the permanent bridge; no elevated work platforms will remain. The final structure will have a larger span than the original bridge, fewer in-channel obstructions, and all disturbed areas will be reclaimed following construction.

PART III. EA CONCLUSION SECTION

1. Based on the significance criteria evaluated in this EA, is an EIS required (YES/NO)? If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action.

No. No significant impacts are anticipated.

2. Describe the level of public involvement for this project, if any, and given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?

The County has invited the public to attend and comment during several early planning meetings where the no-action alternative and preferred project alternatives were discussed. The public was also invited to attend and comment during the County meeting when the preferred alternative was voted on and selected. The public will continue to have opportunities to comment on the project during the permitting phase. The County intends to have two more public meetings in January 2010 to discuss and approve final design plans and final project permits. The draft EA will be available to the public on the FWP web site (fwp.mt.gov under Public Notices), and a legal ad will run in the local newspaper. There will be a 15-day public comment period for the project Floodplain Permit. The Section 10 permit will also be posted for public comment on the USCOE website.

Following permit approval and prior to the start of the construction work, the public will be notified of the project and how that will affect their access across the river and under the bridge. The public will also be notified when the project is complete and normal access and river activities can resume.

3. Duration of comment period, if any:

The comment period will extend for (15) fifteen days beginning January 27, 2010. Written comments will be accepted until 5:00 P.M. February 11, 2010, and can be mailed to the address below:

Montana Fish, Wildlife & Parks

Attn: Scott Opitz

1354 Highway 10 West

Livingston MT 59047 or email comments to: sopitz@mt.gov

4. Name, title, address and phone number of the person(s) responsible for preparing the EA:

Park County Contact:

Marty Malone

Park County Commissioner, Project Contact

Park County, Montana

414 East Callender Street

Livingston, MT 59047

(406) 222-4106

The EA was prepared on behalf of Park County by:

Kevin Feldman, P.E.

Project Manager and Project Engineer

CTA Civil Engineers

13 North 23rd Street

Billings, MT 59101-2467

(406) 896-6273

Jeannette Blank

Permit Coordinator

Environmental Scientist

OASIS Environmental, Inc.

PO Box 582

Livingston, MT 59047

(406) 222-7600

- Page Intentionally Left Blank -

ATTACHMENTS

(See Joint Application Packet)

Page Intentionally Left Blank -